UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

July 27, 2004

Mr. F. Andrew Piszkin
BRAC Environmental Coordinator
Base Realignment and Closure
Marine Corps Air Station, El Toro
7040 Trabuco Road
Irvine, CA 92618

RE: EPA Review Comments on 90% Design Submittal, Shallow Groundwater Unit Remedy, IRP Site 24, Former MCAS El Toro, dated June, 2004

Dear Mr. Piszkin:

EPA has reviewed the above-referenced document in support of the remedial design for the shallow groundwater plume at IRP Site 24. While many of these comments are not necessary in order to achieve EPA approval of the final design, by addressing them you will be providing a more complete document to the field crew tasked with implementing the remedial design for Site 24.

If you have any questions, please call me at (415) 972-3012.

Sincerely,

Nicole Moutoux
Project Manager
Federal Facilities Cleanup Branch

cc: Karnig Ohannessian, SWDIV
John Broderick, RWQCB
Tayseer Mahmoud, DTSC
Marcia Rudolph, RAB Subcommittee Chair
Robert Woodings, RAB Co-Chair
Herb Levine, EPA

Comments on the 90% Design Submittal for Shallow Groundwater Unit Remedial Action Installation Restoration Program Site 24 Volatile Organic Compounds Source Area, Former Marine Corps Air Station, El Toro, June 2004

GENERAL COMMENT

1. The organization of the project (roles of Weston and Earth Technology) is only clearly defined in the Contingency Plan (Appendix I). For clarity, please provide this project organizational material in the main text as well.

SPECIFIC COMMENTS

1. **Section 4.3 Piping Network Installation, Page 4-5:** Drawing C-11 is referred to for a typical trench cross-section; however, C-11 does not include a trench cross-section. On Page 4-6, the design document states that a typical trench cross-section will be provided in the Draft Final 90 Percent Design. However, a draft final 90 percent design is not included in the project schedule, Figure 3. Please include detailed cross-sections for each segment of trench that contains a different configuration of utilities and pipe diameters.

2. **Section 4.3.4 Connection to Modified IDP System, Page 4-7:** It does not appear that the design documents contain sufficient detail regarding the connection to the Irvine Desalter Project (IDP) system to enable the contractor to perform this work. Please revise the design documents to describe in detail how the extraction system piping will be connected to the IDP treatment system, including appropriate procedures and detail drawings which specify pipe sizes, types, fittings, lengths, etc.

3. **Section 4.3.1.1, Excavation, Page 4-5:** The requirements for protecting workers in trenches vary between Section 4.3.1.1 and Specification Section 02222. Title 8 of the California Code of Regulations (CCR), Subchapter 4. Construction Safety Orders, Article 6. Excavations, Section 1541.1 Requirements for Protective Systems provides detailed requirements for protecting workers. Protection for workers is required unless the trench is less than 5 feet deep *and* a competent person determines there is no potential for cave-in. In the event that any trenches are constructed for this project that are more than 5 feet deep and which workers may be present, please revise the design submittal to indicate that all of the applicable provisions of the CCR will be complied with rather than, "Trenches greater than 4 feet deep will be evaluated for shoring or sloping measures required to ensure the protection of workers." Specifically, please assure that a "competent person" (as defined in the CCR) inspects all trenches into which workers may enter, regardless of depth, and that the "competent person" does not see any indication of a potential cave-in.

Appendix C, Drawings

1. **Drawing M-3, Mechanical Details:** The drawing of the equalization tank and associated piping is incomplete. It does not include the carbon filter, valves and fittings are not

labeled or described, and sizes are not indicated. Please revise this drawing to show sufficient detail for construction.

2. **Drawing S1, Structural Details:** The slab design does not include subgrade, reinforcement, thickness, or concrete mix design. Please provide the design for the slab in the draft final 90 percent design. Additionally, please include the seismic/wind calculations for the equipment anchors.

Appendix E, Engineering Calculations for Pipe Design:

1. **Section E4.1 Extraction Well Pumps:** The pumps recommended as a result of the calculations presented in this appendix are Grundfos Redi-Flo3; however, different models of Grundfos pumps are listed in Specification Section 11212. Please revise the design documents to provide calculations which support the selection of Grundfos Models 10S20-27, 10S15-21, and 16S15-14 rather than the Grundfos Redi-Flo series. Also, the pumping head and flow rate for each well listed in the specifications are different from those use in the calculations. Please revise the calculations to use the specified data.

2. **Table E.1-3-Miscellaneous Calculation Notes:** This table provides key information for interpreting the calculations presented only in summary form in Table E-1; however, this table seems to be missing information and sentences are cut-off. Please revise this table to provide complete information.

Appendix F, Design Specifications

1. **Specification Section 01355, Environmental Protection:** This specification is incomplete. For example, paragraph 3.11 states that contaminated environmental media...shall be managed, but does not state how this will be done. If Specification Section 02120, Transportation and Disposal of Remediation Derived Wastes, is meant to apply here, it should be clearly stated.

2. **Specification Section 01770, Closeout Procedures, Page 1:** The required accuracy for vertical surveying listed in the specification is 0.1 feet. Vertical surveys can be controlled much more accurately than 0.1 feet, though 0.1 feet may be sufficient if the groundwater gradient is steep. Typically, depths to groundwater are measured to the nearest 0.01 feet, which is required for this project, which implies a need for higher order accuracy of the casing survey. Please consider whether 0.1 feet is sufficiently accurate for conditions at El Toro and revise the specification if required.

3. **Specification Section 02222, Excavation, Trenching, and Backfill, Page 3:** The specification states that pipe and conduit trenches shall be excavated as recommended by the manufacturer of the pipe; however, in this case the pipe and conduit are to be installed in combined trenches. Therefore, the manufacturers recommendation for a particular type of pipe will not address the appropriate installation in this situation. Please revise the specification to indicate how the trenches should be excavated for combined discharge

pipe and conduit, and make sure the specification is consistent with both civil and electrical drawing details. In addition, paragraph 3.3 refers to the drawing for the warning tape depth, but warning tape is not shown on the drawings. Please include the depth of the warning tape on the drawings.

4. **Specification Section 02525, Extraction Wells, Page 3:** The specification contains grain-size requirements for the extraction well filter packs. Typically, filter packs are selected in the field based on formation grain sizes. The Navy may have sufficient experience at El Toro to be able to select filter pack gradations in advance. Please consider whether filter pack gradations should be selected in the field and revise the specification if necessary.

5. **Specification Section 02525, Extraction Wells, Page 4:** According to the design narrative, page 4-5, the vault boxes will be provided with water-tight covers; however, this is not indicated in the specification. Please revise the specification, paragraph 2.8.1, to specify that water-tight vault covers shall be provided.

6. **Specification Section 02525, Extraction Wells, Page 5:** Please indicate the types of samples to be collected from the boreholes and the intervals at which the samples will be collected.

7. **Specification Section 11246, High-Density Cross-Linked Polyethylene Tank, Page 4:** Please include a specification for the air-phase granular activated carbon filter to be plumbed to the tank vent in the accessories section.

8. **Specification Section 15065, HDPE Pipe, Fittings, and Flanges, Page 3:** The final backfill compaction is specified to be 90 percent Standard Proctor. This contradicts the compaction specified in Section 02222 of 95 percent. Please correct this discrepancy.

Appendix H, Construction Quality Control Plan

1. It appears that this CQCP was prepared by Weston to be used to verify that the work is conducted in accordance with the Weston (February 2004) Remedial Action Work Plan (RAWP). Section 01110 of the Specifications (Appendix F) indicate that a Quality Control Plan will be submitted along with a RAWP. A RAWP has already been prepared and this Appendix is a quality control plan. Please revise the document to indicate whether the Appendix H CQCP and the previously prepared RAWP are the only RAWPS and CQCPs to be prepared for this project. If so, the CQCP would be more appropriately attached to the RAWP, along with the Health and Safety Plan and other required documents.

2. The CQCP does not follow the format or content requirements of Specification Section 01450 Construction Quality Control. It does not follow the table of contents listed in section 1.6.2.1 which specifies the major sections that should be included and the order. The CQCP does not have the qualifications for each person in the QC organization in resume format; does not include a listing of outside organizations that will be employed

by the Contractor; does not list the submittal reviewer(s) by name; and does not include a testing plan and log including the specification paragraph requiring the test. Please revise the CQCP to include the required information in the required format.

3. The CQCP indicates that it, "describes specific quality control (QC) activities that will be implemented during remediation work at IRP Site 24." However, the descriptions of specific activities are incomplete. The list of Definable Features of Work (DFW) on page 6-1 appears to be complete, but there is very little detail on what specific quality control activities will be conducted to assure that the DFW are conducted in accordance with the project plans and specifications. For example, the Appendix G (of Appendix H) checklist for Electrical Work asks the QC inspector, "Is all work in conformance with NEC, OSHA and Cal OSHA requirements?" However, the checklist does not indicate which specific NEC, OSHA, and Cal OSHA requirements are applicable to the work. The checklist for Concrete Work for Pad Installation asks, "Have all required submittals been submitted and approved for conformance with the Specifications?" Please revise the CQCP to list specific items that are to be verified during construction.

4. The checklists in Appendix G (of Appendix H) divide the work up into three-phases: preparatory, initial and follow-up. However, the work described on the checklists is organized differently. The Army Corps of Engineers indicates (see Engineering Pamphlet EP 715-1-2, February 1990, A Guide to Effective Contractor Quality Control [CQC]) that the Initial Phase covers the start of actual work on a DFW while the follow-up phase consists of additional quality control inspections on the DFW - i.e., the first well installed is the initial work, subsequent well installation would be follow-up work. The checklists in Appendix G (of Appendix H) for the initial phase of work cover aspects of the work more appropriate for the preparatory phase and do not actually cover any of the work to be performed. Please revise the checklists for the Initial Phase to include the initial work for each DFW (e.g., the first well installed, the first segment of trench dug, the first segment of pipe installed et cetera). Please provide a procedure for determining the amount of follow-up inspection that will be performed for each DFW. Please revise the inspection checklists in Appendix G (of Appendix H) to correspond with the intent of the CQCP.

5. The Appendix G (of Appendix H) checklists do not contain enough specific details for the DFW that extend over large areas (well installation and trenching). For example, the trenching and backfilling checklists should be revised so that they can be used to document that the required tests were performed along the entire alignment of the pipelines, i.e., there should be a sheet for each segment of the trench where the QC inspector can document that they verified trench depths, trench bedding thicknesses and material qualities, pipe alignments, initial backfilling, each lift of backfilling, the Proctor curve used for backfill, the in-situ density and water content after compaction, construction methods, etc.

7. **Appendix G (of Appendix H):** Each specific line item should include all requirements of the specification and the specific items to be verified. Please assure that all specification requirements that are to be verified are listed in the checklists.

RESPONSE TO PREVIOUS COMMENTS ON THE 60 PERCENT DESIGN SUBMITTAL

1. **Specific Comment No. 3:** The original comment asked the Navy what tests it intended to run on the Toxicity Characteristic Leaching Potential (TCLP) extracts resulting from performing a leaching test on fill brought on to the site. The Navy revised Section 02222 to require that the fill be "certified" as clean. This response does not address the original comment. If fill is to be brought on to the site, please specify what tests will be conducted on the fill by whom at what rate and what standards will be used to assess the acceptability of the fill.

2. **Specific Comment No. 4:** The original comment asked for resolution to a discrepancy between the specifications and drawings regarding trench widths. The response resolved the discrepancy by removing any requirements on trench widths from both the specifications and drawings. This results in a 90 percent design document for two miles of trenches which does not include any widths or depths for the trenches. Please revise the design document to include a detail design for each segment of trench including specifications for bedding, backfill, spacing of pipe and conduit, warning tape depth et cetera.

3. **Specific Comment No. 5:** The response indicates that Specification 02525 will be modified to contain procedures to mitigate against biofouling, but it was not revised as stated. Section 4.2.4 appears to have been modified to address this comment. Please revise Specification 02525 to address biofouling consistent with Section 4.2.4.

4. **Comment No. 6:** The response indicates that the well vaults will not be equipped with sumps. Even allowing the construction of these wells with sumps and sump pumps would not have followed the California Well Standards (see California Department of Water Resources, Bulletins 74-81 and 74-90). Please revise the design report to address how the wells will be sealed to prevent the introduction of surface water into the wells.